

Please substitute the following paragraph for the paragraph on page 4 starting at line 14:

92 These patents are not directly applicable to EDI, and therefore do not provide or teach that there is an intelligent editor within the customer order fulfillment system, or that post-processing modifications can be made to a customer order through the order fulfillment system. It is therefore an object of the present invention to provide an integrated system and method for pre-processing electronic data requests before they are sent to an order processing system that provides a planning and forecasting engine that determines if material is available for a given quantity and delivery date. These systems also do not enable corrections to be made to electronic data requests before they are sent to an order processing system. Nor do these systems allow electronic data requests to be rejected so that they are not sent to an order processing system when certain criteria specified within the electronic data request cannot be satisfied.

Please substitute the following paragraph for the paragraph on page 5 starting at line 2:

93 It is therefore an object of the present invention to provide an integrated system and method for pre-processing electronic data requests before they are sent to an order processing system.

Please substitute the following paragraph for the paragraph on page 14 starting at line 8:

94 Figure 4 shows a functional flow diagram of the pseudo-sales order workbench 206. When ESO errors are encountered, workflow items are created by the SAP Workflow, as indicated in function block 402. The workflow items are sent to the in-basket of the responsible person. When the work item is executed, as shown in function block 401, the work flow is displayed on a user terminal, as indicated by step 407. ESOs can also be displayed from the SAP workflow 402 that satisfy selection criteria that a user inputs into display block 403. Work flow messages are created under pre-

94 defined conditions and routed to the responsible person for action. Responsible persons can view and execute their messages from their SAP Office Inbox (not shown). When the message is executed, the user is branched to the appropriate application to correct the condition. In a preferred embodiment of the present invention, a workflow message is created when the order interceptor 201 encounters an error or determines that a manual review of the ESO is required. The user can also input selection criteria via the input screen, as shown in step 403, to display ESOs that satisfy the selection criteria, as shown in function block 401. The ESOs are stored in accordance with the SAP AG Corp. ESO tables ESO Control 404, ESO Data 405, and ESO Status 406. These tables validate the ESO structure, and pass control to ALE where the ESO can be processed into the appropriate business object, such as a sales order or a purchase order acknowledgment, etc. The error message table 415 displays the error messages, as shown in function block 408. Once the error messages have been displayed, the user can also view the fields 409 associated with the ESOs on the pseudo-sales order workbench 206, as shown in function block 409. The user can also perform various operations on the ESO, as indicated in function block 410. A test is then made in decision block 411 to determine if the ESO complies with the configuration rules and updates. If the ESO does not satisfy the configuration rules, a message is sent to the Pseudo-sales Order Workbench, as shown in function block 412. If the ESO satisfies all configuration rules and updates, then the ESO is updated in tables 404, 405, 406 and 415. The process returns, as shown in function block 414. If the user specified selection criteria is via display 403, then the return is to the user's display terminal 403. If the SAP workflow 402 created the work item, then the return is back to SAP workflow 402.

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Please substitute the following paragraph for the paragraph on page 21 starting at line 16:

95 If pre-processor module 603 detects an error or manual review condition, the workflow module 605 creates a workflow that is made available to the in-basket of the responsible person. Once the work item is executed, the customer purchase

95 order workbench module 607 provides a display to a user terminal. The user interface is modeled after the incompleteness log for processing sales orders. The initial screen will display a list of messages identifying why the request was held along with key information from the ESO's control and data record segments. If the user is authorized, each item in the list can be executed and taken to the appropriate screen to correct or review the data. After each correction, the ESO is reprocessed by pre-processor module 603. After executing the message, control goes back to the main screen. Messages will be removed from the list if it now passes all the edits and audits for that rule. If the request was held for manual review, the User can navigate to an overview screen to review the request using screens similar to those in SAP sales order process. There, certain fields can be updated, such as sales area and delivery plant. Some fields however, can only be changed in conjunction with executing specific messages. For example, the customer's PO number can be changed only if a duplicate error is detected. For 860 change order requests, the corresponding sales order information can be displayed to assist the user in analysis by drilling down on the order number field. Additionally, a branch to the native SAP IDOC Workbench can be made by drilling down on the ESO number, as provided by the analyzer drill down report module 611. Access is now available to all ESO segments and data that may not have been available in customer purchase order workbench module 607.

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Please substitute the following paragraph for the paragraph on page 25 starting at line 15:

96 If the Z\_IDCO\_INPUT\_PRE\_PROCESS module 603 determines that a previous request for a customer and given purchase order is pending an acknowledgment, then the inbound ESO's status will be set to 'Queued for Pre-Processor' (Z0). The definition of incomplete in this case means that a prior ESO has not been posted by the sales order application or the original sales order is incomplete or blocked for any reason. This feature can be disabled by changing the corresponding column in table 508 using trx ZEDI. The ZMOM101 module 614 will be scheduled as a reoccurring job run hourly to process ESOs in this status. Each request will be

9<sub>6</sub> checked for pending acknowledgments. If the request is cleared for process, then control is passed to the Z\_IDOC-INPUT module 610 which calls the pre-processor and manages the ESO's status and work item; otherwise, the request is held until the next run of the ZMOM101 module 614.

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Please substitute the following paragraph for the paragraph on page 28 starting at line 1:

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9<sub>7</sub> The SAP Supplied Function Modules with User Exits module 616 functions with SAP function modules IDOC\_INPUT\_ORDERS 616 to post new sales orders, ICOC\_INPUT\_ORDCHG 616 to change existing sales orders, and IDOC\_INPUT\_DELINS 616 to add FDS and JIT scheduling releases. User exits are available at key points in the process to allow local modifications as necessary. Module 616 enables additional data, such as delivery plant, delivery block, fixed quantity ind., additional partners, and pricing reference material to be loaded into the BDC session. For delivery schedules, IDOC\_INPUT\_DELINS (not shown) supports customer expected pricing condition EDI1 with screen logic. No edits and audits are performed in these exits. These types of functions are performed by pre-processor module 603 and worked in workbench module 606 before this stage.

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Please substitute the following paragraph for the paragraph on page 40 starting at line 6:

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9<sub>8</sub> For new sales order requests, the order type is determined based upon the ESO's logical message type (edidc-mestyp) and message code (edidc-mescod). If the message type is ORDERS and message code not equal to BPO (for blanket PO), then the order type is defaulted to 'OR' for standard order. If the message type is ORDERS and message code is BPO, then order type is defaulted to 'ZBO' for contract. After the internal material is determined, the default order type can be overridden from the local EDI Configuration table/field ZEDITCFG-ZOVRAUART (rule is only applicable at material level).

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Please substitute the following paragraph for the paragraph on page 41 starting at line 6:

99 For new sales order requests, the Sales area is determined from table EDSDC. The keys to this table are KUNNR (Customer number) and LIFNR (Vendor number sent with EDI). The Customer number is the Sold-to number and the Vendor number represents our Sold-to number at the Vendor. LIFNR is taken from the LF partner (E1EDKAI-PARTN) field on the ESO. If this field is not provided, the LIFNR is taken from the AG partner (E1EDKAI-LIFNR) field on the ESO. Together, these fields determine the Sales Area. For changes to an existing sales document, the Sales area is taken from the existing document.

Please substitute the following paragraph for the paragraph on page 43 starting at line 1:

910 For a new sale order request, or change to an existing order (line item add or change where the Customer's material number does not match the Customer's material number on the corresponding line item (using Customer's line number)), the delivering plant is determined from the material's sales view (table MVECE, field DWERK). For change to an existing sales document where the Customer's material number does not change, the internal material is taken from the matching line item in the order.

Please substitute the following paragraph for the paragraph on page 56 starting at line 23:

- 911
- Verify that an FDS (Forecast Delivery Schedule) exists in table VDLB where ABART = '1' and ABRLI = 0

Please substitute the following paragraph for the paragraph on page 56 starting at line 25:

- 912
- If mode is append (E1EDP10-LABKY = '1'), then any open delivery schedules are brought forward and appended as delivery schedules on the ESO (segment E1EDP16). This audit is performed only once. Open

Q<sub>12</sub>

schedules are determined by comparing tables VBEP and VBBE. If the schedule is still open (entry is VBBE), then the delivery schedule is brought forward. In addition, any shipments against the delivery schedule are also applied to the ESO (E1EDP16-FZABR) and are subsequently available for display in the Workbench. The delta between the request quantity and ship quantity is sent to PROFIT/ATP for commit. The shipped quantity for a delivery schedule is derived from VBEP-WMENG minus VBBE-OMENG.

Please substitute the following table for the table on page 57:

Q<sub>13</sub>

Segment-Field	Description	Rule
E1EDK10-ABRAB	Release valid-from date	Earliest request date (E1EDP16-EDATUB) on ESO including those brought forward for JIT
E1EDK10-ABRBI	Release valid-to date	Latest request date (E1EDP16-EDATUB) on ESO including those brought forward for JIT
E1EDK10-ABHOR	JIT valid-to date	If JIT release, then set to E1EDK10-ABRBI

Earliest request date (E1EDP16-EDATUB) on ESO including those brought forward for JIT.

Please substitute the following paragraph for the paragraph on page 60 starting at line 26:

Q<sub>14</sub>

If the Input Mode is not from the Pseudo-Sales Order Workbench (implies Work Item already exists), a Pseudo-Sales Order Workbench Work Item is created

Q14

using function module 'Z\_Workflow\_Error\_Create'. The Work Item text consists of order type and action, delivering plant, internal material, Pseudo-Sales Order and Customer name.

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Please substitute the following paragraph for the paragraph on page 63 starting at line 15:

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Q15

- Line items canceled by Customer are denoted with 'D' in field XVBEP-UPDKZ
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Please substitute the following paragraph for the paragraph on page 64 starting at line 1:

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Q16

The request is then sent to Pre-ATP (function module Z\_IDOC\_INPUT-PRE-ATP (313)) which populates the ATP / SAP Interface table ZATPDEM with the information supplied in the API (see structures and tables above) and interfaces to ATP as instructed in the API via MQSeries. Parameter TRIGGER\_ATP ('x' send to ATP) controls if the request is to be sent to ATP. This is the case for all ESOs except when commits are present on the ESO (from OEMLS (111), for example). Parameter RESEND\_COMMIT is only used when an ESO is rejected by Customer and the request has been committed by ATP and the logical message is ORDCHG or DELINS. When RESEND\_COMMIT = 'x', then the commits on the existing order are resent to ATP to replace the latest commits vs RESEND\_COMMIT = ' ' which means requesting a commit. Parameter TRIGGER\_ZMOM103 tells ATP to raise an event to trigger the Restart ESOs in Z4 Status (ZMOMI03) module (319) upon returning the ATP results. If the link to ATP is not responding in a timely manner (currently set to 60 seconds), the Pre-ATP function is re-executed with the trigger set to 'x'. The ESO's status is set to 'Z4' and processing of the ESO is suspended until the Restart ESOs in Z4 Status (ZMOMI03) module (319) are triggered.

After Pre-ATP is performed, the interface table ZATPDEM is polled every 3 seconds to see if the results from ATP have been posted. If all delivery schedules on the ESO have a response, then Post-ATP (Z\_IDOC\_INPUT\_POST\_ATP) is

Q16 performed. The loop is repeated until all delivery schedules have a response or time limit exceeded (up to 20 times or 1 minute elapsed time). If the time limit is exceeded, then the Pre-ATP function is re-executed with TRIGGER\_ZMOMI03 set to 'x'. When the Restart ESO in Z4 Status ZMOM103 module 319 is triggered, then Post-ATP is performed to pick back up the processing of the ESO.

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Please substitute the following paragraph for the paragraph on page 65 starting at line 19:

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Q17 There is some initial configuration to be done prior to using the workbench. This configuration is not covered in this document, such as: to configure a specific customer to always manually review its orders. The CSR has the capability to branch to selected configuration processes from the workbench. This will be covered in detail later in this document. The order interceptor documentation, above, explains the customer-specific rules and configuration.

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Please substitute the following paragraph for the paragraph on page 67 starting at line 19:

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Q18 If PROFIT Commit data is present, the CSR can not change any data because the dates and quantities are already committed for that plant.

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Please substitute the following table for the table on page 69:

Q19

Delivery Schedules	Allows the CSR to view/change the dates and quantities at the delivery schedule level. There could be multiple delivery schedules per item. Other key data is also displayed at this level such as the MOQ and SPQ quantities for that material. You may use the checkbox to view that specific item's delivery schedules or simply hit the Delivery Schedules pushbutton to page through each one.
Materials on EDI Trx	A popup window displays all the material number(s) that existed on the inbound EDI transaction. It also shows what kind of material number it is in terms of customer's material number, Vendor's material number, changeable/catalog material number, etc.

Please substitute the following paragraph for the paragraph on page 72 starting at line 19:

Q20

This screen, as shown in Figure 7, allows the CSR to review/change all the delivery schedules for a line item. Both the date and quantity are modifiable fields. If there are multiple delivery schedules, these will be scrollable via the page up and page down. Please note that if you change one or more of the delivery schedules, the workbench will automatically accumulate the total to be updated on the item